

CLAIMS

What is claimed is:

1. A method comprising:
 - storing a clip of a media stream at a first time;
 - finding the clip in the media stream at second time later than the first time; and
 - storing a first portion of the media stream greater than and including the clip.
2. The method of claim 1 wherein the finding comprises:
 - performing digital signal processing upon a window of the media stream to produce a DSP window result;
 - performing digital signal processing upon the clip to produce a DSP clip result; and
 - comparing the DSP window result to the DSP clip result.
3. The method of claim 1 wherein the storing the portion comprises:
 - identifying a start point of the first portion and an end point of the first portion from the media stream; and
 - storing the media stream from the start point to the end point.
4. The method of claim 1 further comprising:
 - again finding the clip in the media stream; and
 - storing another portion of the media stream greater than and including the clip.
5. The method of claim 4 further comprising:
 - comparing the first portion to the other portion; and
 - discarding one of the portions, based on the comparison.
6. The method of claim 1 wherein the media stream comprises audio.
7. The method of claim 6 wherein the audio comprises broadcast radio.

1 8. The method of claim 1 wherein the media stream comprises video.

1 9. The method of claim 8 wherein the media stream comprises television.

1 10. The method of claim 1 further comprising:
2 receiving parameters, and wherein at least one of the finding and storing are responsive to the
3 parameters.

1 11. The method of claim 10 wherein the parameters comprise at least one of:
2 an estimated time into the first portion that a trigger was activated;
3 a length of possible block to watch for;
4 a suspected identification of the first portion;
5 a specification of one or more broadcast stations to monitor;
6 a number of instances to save for best-instance comparison;
7 a maximum allowable price;
8 a preferred source;
9 a song style; and
10 a movie genre.

1 12. The method of claim 1 further comprising:
2 identifying a media content item corresponding to the clip; and
3 obtaining the media content item from a source which is different than the media stream.

1 13. The method of claim 12 wherein the source is an on-line retailer.

1 14. An apparatus for playing a media stream, the apparatus comprising:
2 a receiver for receiving the stream;
3 a capture trigger;
4 a storage system coupled to the receiver to store a clip of the media stream in response to the
5 capture trigger; and

6 a processing system coupled to the storage system to search for the clip in the media stream
7 after storage of the clip.

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1 15. The apparatus of claim 14 further comprising:

2 a block manager for storing a block of the media stream to the storage system, wherein the
3 clip is a proper subset of the block.

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1 16. The apparatus of claim 15 wherein the media stream comprises a radio broadcast and the
2 block comprises a song.

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1 17. The apparatus of claim 15 wherein the media stream comprises a television broadcast and the
2 block comprises a television show.

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1 18. The apparatus of claim 15 wherein the receiver is coupled to receive the media stream over a
2 wireless broadcast channel.

3
1 19. The apparatus of claim 15 wherein the receiver is coupled to receive the media stream over a
2 wired broadcast channel.

3
1 20. The apparatus of claim 15 further comprising:
2 an output device coupled to the receiver for playing the media stream.

3
1 21. An apparatus comprising:

2 a receiver for receiving a media stream;

3 a storage system;

4 a capture trigger; and

5 a processing system including,

6 a clip manager responsive to the capture trigger to store a first instance of a clip of the
7 media stream to the storage system,

8 a block manager responsive to at least one of the clip manager and the capture trigger
9 to search for a second instance of the clip in the media stream and to store a first block of the media
10 stream containing the second instance of the clip to the storage system.

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1 22. The apparatus of claim 21 further comprising:
2 an output device for playing the media stream.
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1 23. The apparatus of claim 21 wherein the block manager is further responsive to search for a
2 third instance of the clip in the media stream, to store a second block of the media stream containing
3 the third instance of the clip to the storage system.
4

1 24. The apparatus of claim 23 wherein the block manager is further responsive to compare the
2 first block to the second block and to select a better of the blocks.
3

1 25. The apparatus of claim 24 wherein the block manager is further responsive to discard one of
2 the blocks which is not the better of the blocks.
3

1 26. The apparatus of claim 23 wherein the block manager is adapted to play the first block and
2 the second block and to accept from a user a selection of one of the blocks.
3

1 27. The apparatus of claim 26 wherein the block manager is further adapted to discard one of the
2 blocks in response to the user's selection.
3

1 28. The apparatus of claim 21 wherein the processing system receives parameters of at least one
2 of the clip and the first block from a user.
3

1 29. The apparatus of claim 28 wherein the parameters comprise at least one of:
2 an estimated time into the first block that the capture trigger was activated;
3 a length of possible block to watch for;
4 a suspected identification of the first block;
5 a specification of one or more broadcast stations to monitor;

a number of instances to save for best-instance comparison;
a maximum allowable price;
a preferred source;
a song style; and
a movie genre.

30. The apparatus of claim 21 wherein the block manager comprises:
means for finding an identification of the first block from a list source; and
means for acquiring a second block containing a third instance of the clip from a block
source.

31. The apparatus of claim 30 wherein the list source is a radio station's website and the block
source is an on-line music retailer.

32. An improved radio having a receiver for receiving a radio broadcast, the wherein
improvement comprises:
a capture trigger for causing storage of a first clip of the radio broadcast;
means for finding a second clip of the radio broadcast matching the first clip; and
means for storing a first portion of the radio broadcast containing the second clip and more.

33. The improved radio of claim 32 wherein the improvement further comprises:
means for identifying a start and end of a song contained in the stored first portion of the
radio broadcast; and
means for storing the song.

34. The improved radio of claim 33 wherein the improvement further comprises:
the means for finding further for finding a third clip of the radio broadcast matching the first
clip;
the means for storing further for storing a second portion of the radio broadcast containing
the third clip;

6 the means for identifying a start and end further for identifying a start and end of a second
7 instance of the song contained in the second portion of the radio broadcast; and
8 the means for storing further for storing the second instance of the song.
9

1 35. The improved radio of claim 34 wherein the improvement further comprises:
2 means for selecting one of the song and the second instance of the song; and
3 means, responsive to the means for selecting, for deleting one of the song and the second
4 instance of the song.
5

1 36. The improved radio of claim 35 wherein the improvement further comprises:
2 means for prompting a user for at least one parameter of at least one of the clip and the song.
3

1 37. The improved radio of claim 36 wherein the improvement further comprises:
2 the at least one parameter comprising at least one of,
3 an estimated time into the first block that the capture trigger was activated;
4 a length of possible block to watch for;
5 a suspected identification of the first block;
6 a specification of one or more broadcast stations to monitor;
7 a number of instances to save for best-instance comparison;
8 a maximum allowable price;
9 a preferred source;
10 a song style; and
11 a movie genre.
12

1 38. The improved radio of claim 33 wherein the improvement further comprises:
2 means for obtaining an identification of the song; and
3 means for purchasing a second instance of the song from an external source per the
4 identification.
5

1 39. The improved radio of claim 32 wherein the improvement further comprises:
2 the capture trigger comprising a button.

3
1 40. The improved radio of claim 39 wherein the improvement further comprises:
2 the radio being adapted for use in an automobile.
3

1 41. A method of recording a media content item substantially in its entirety from its start to its
2 end, wherein the media content item is being received from an external source as part of a
3 transmission which may subsequently include a repeat of the media content item, the method
4 comprising:

5 during play of the media content item at a point after the start of the media content item,
6 receiving a capture trigger;

7 responsive to the capture trigger, recording a clip of the transmission;

8 recording a first portion of the transmission subsequent to the clip;

9 identifying a first segment of the recorded portion as being substantially similar to the clip;
10

11 and

12 identifying the repeat of the media content item within the first recorded portion.

1 42. The method of claim 41 further comprising:
2 retaining the repeat of the media content item in storage.
3

1 43. The method of claim 42 further comprising:

2 recording a second portion of the transmission subsequent to the repeat of the media content
3 item;

4 identifying a second segment of the second recorded portion as being substantially similar to
5 the clip; and

6 identifying a second repeat of the media content item within the second recorded portion.
7

1 44. The method of claim 43 further comprising:

2 retaining the second repeat of the media content item in storage.
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1 45. The method of claim 44 further comprising:

2 discarding one of the repeat and the second repeat of the media content item.

3
1 46. The method of claim 45 further comprising:

2 receiving from a user a selection of one of the repeat and the second repeat; and
3 the discarding being responsive to the selection.
4

1 47. The method of claim 45 further comprising:

2 automatically selecting a better of the repeat and second repeat; and
3 the discarding being responsive to the automatically selecting, to discard the one of the repeat
4 and the second repeat not selected as the better.
5

1 48. The method of claim 41 wherein the identifying comprises:

2 performing digital signal processing upon the clip and the recorded portion.

3 49. The method of claim 41 further comprising:

4 recording a second portion prior to the first portion;
5 determining that the clip is not found in the second portion; and
6 discarding the second portion.
7

8 50. An entertainment device for use with a receiver that receives entertainment content from a
9 media stream, the entertainment device comprising:

10 (a) a capture trigger for identifying a clip of the entertainment content;

11 (b) a storage system including,

(i) a clip storage for storing the clip,

(ii) a block storage for storing a block of the entertainment content, and

(iii) a stream storage for storing portions of the entertainment content; and

(c) a processing system for performing operations upon the entertainment content and
including,

(i) a clip manager responsive to the capture trigger for causing the clip storage to store
the clip, and

12 (ii) a block manager for locating, in the stream storage, a first portion of the
13 entertainment content which contains a substantially similar copy of the clip, and for identifying a
14 first block of the portion within the first portion and causing the block storage to store the first block.
15

1 51. The entertainment device of claim 50 wherein:

2 the processing system further includes a digital signal processor for performing operations to
3 facilitate the locating and identifying.
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1 52. The entertainment device of claim 51 wherein:

2 the block manager causes the stream storage to repeatedly store respective portions of the
3 entertainment content subsequent to activation by a user of the capture trigger, and upon determining
4 that a given portion of the respective portions does not contain a substantially similar copy of the
5 clip, the block manager causes the stream storage to discard the given portion.
6

1 53. The entertainment device of claim 52 wherein:

2 the block manager is further for identifying one or more subsequent blocks which contain
3 substantially similar copies of the clip, and for discarding at least one of the first block and
4 subsequent blocks which is of lesser quality than another of the first block and subsequent blocks.
5

1 54. The entertainment device of claim 52 wherein:

2 the block manager utilizes a sliding window over the stream storage to hunt for the
3 substantially similar copy of the clip.
4

1 55. The entertainment device of claim 50 wherein the entertainment device comprises a radio
2 recorder.
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1 56. The entertainment device of claim 50 wherein the entertainment device comprises a
2 television recorder.